

DISTRICT HEATING

How heat networks can contribute to decarbonisation



As we search for ways to build back a greener and more resilient society, this is the time to embrace solutions designed to proactively mitigate the next crisis – such as urban district heating schemes. Ken Hunnisett, from Triple Point Heat Networks Investment Management, writes on funding for such projects.

Decisive action is needed immediately to ensure that we are successful in shifting towards cleaner, more affordable, renewable heating solutions that align with the low-carbon agenda. Fortunately for all of us, the need for this green growth has been recognised as an unmissable opportunity following the events of this year. Business has called for a green recovery and the government has responded with a timely and impressive £3bn package to get the economy moving in the right direction.

'Build back better' is the unequivocal call to arms. This September, the Climate Assembly UK – an assembly commissioned to represent the views of the British

public on pathways to net zero – published its report, which indicated a strong push for action. Members of the Assembly recognised the important role technologies such as heat networks, hydrogen and heat pumps must play in decarbonising homes.

This chips away at the long-held belief that action on climate change is opposed by the British public. On the contrary, the report demonstrates a strong desire for change.

Delivering the change needed

We have all now experienced the impacts of a global crisis in ways that few of us could have anticipated. Since the nation first

went into lockdown on 23 March, our homes have been our salvation; yet this won't be the case for those living in fuel poverty if a second lockdown is implemented in the colder winter months.

With this prospect growing increasingly likely, and millions across the country already struggling to keep their homes warm in any normal winter season, concerns of even higher energy bills are widespread. The spike in unemployment and subsequent loss of earnings will likely exacerbate the problem this year. Providing homes with affordable warmth is nothing short of essential and the COVID-19 crisis is testament to that – we must protect our most vulnerable.

At the same time, the pandemic has shown us that change is possible. Just days after the lockdown was first implemented, government departments, businesses and individuals adapted to a new way of living and working. This demonstrated just how capable we all are of moving away from the *status quo*. Heat decarbonisation, and indeed the wider low-carbon agenda, calls for at least the same level of determined transformational change.

Heat networks – technology agnostic

The phrase 'there is no silver bullet to heat decarbonisation' hits the nail on the head. Various technologies will be needed, and no single solution will suffice.

Government initiatives on energy efficiency and low-carbon heating reflect that, by providing support through grants, research and infrastructure investment which focus on increasing the feasibility and uptake of multiple solutions. However, we must recognise that whilst some solutions need more time to commercialise, others can be implemented at pace.

Heat networks, otherwise known as district heating, are an example and they are already being constructed across the UK. They work by taking heat from a centralised source and distributing it to multiple buildings through a

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series of underground pipes, removing the need for individual heating systems – which are often carbon intensive – in homes and buildings.

This technology-agnostic solution means that as future, innovative heat solutions join the market in years to come, they can be added to the network with little disruption to the communities they serve. They also allow for expansion, meaning the networks themselves can be extended to connect to new developments and buildings over time.

In recognition of the significance heat networks have in mitigating the climate emergency, the government set aside £320mn in grants and low-interest loans to give this market the boost it needs and provide the catalyst for change.

Since the Heat Networks Investment Project (HNIP) officially opened for applications in April 2019, we have successfully awarded funding to eighteen projects in regions across England and Wales. In England, these schemes belong to cities such as London, Leeds, Newcastle and Bristol; in Wales, they belong to Cardiff and Bridgend. Many of these projects are already leveraging economies of scale by providing low-carbon heat to public sector buildings, and commercial and non-residential buildings as well as homes.

Helping local authorities meet targets

Since the legislation of net zero in 2019, over 70% of local authorities across the country have set ambitious climate targets of their own. Some have committed to meeting the target well before 2050, and have published plans to reduce emissions, improve air quality and ensure better health and wellbeing in their communities. In many cases, heat decarbonisation features strongly on their agendas and heat networks are recognised as a solution.

Five of the first seven projects to have been awarded HNIP funding back in February 2020 were local authority projects – the Barking Town Centre Strategic Distribution Energy Scheme; Bristol's Redcliffe Heat Network, and Old Market Heat Network; and the Leeds Pipes scheme.

Since then, we have been delighted to award grant funding to Gateshead City Council to support the expansion of the Gateshead District Energy Scheme. This project is particularly

innovative. Utilising a mine water source heat pump to extract heat stored in abandoned mine workings, it the first mine water heating project to receive HNIP funding.

Another HNIP milestone was met when funding the first two district heating schemes in Wales. Bridgend County Borough Council will now move forward with the delivery of its town centre heat network, which forms a key part of its plans to decarbonise heat within the southern Wales county.

These ambitions are shared by Cardiff Council, which was successful in applying for HNIP funding to support with Phase 1 of its city-wide heat network. Buildings that connect to the Cardiff heat network are expected to reduce their carbon emissions by around 80% compared to traditional gas heating.

Together, these projects provide us with examples of how local councils can and are responding to the climate emergency, and we look forward to announcing more schemes of this nature before the year comes to an end.

Investing in infrastructure

It is not just local authorities that recognise the importance associated with heat networks; the private sector is also investing, bringing forward ambitious projects. This was demonstrated in the latest Heat Network Pipeline report published by the Department for Business, Energy and Industrial Strategy. The pipeline of schemes that HNIP is working with has increased by £240mn since the last quarter, now standing at over £890mn.

Combined with projects being carried out with support from the Heat Networks Delivery Unit (HNDU), which offers support through the early stages of a heat network, the total pipeline equates to an impressive £1.7bn. This is expected to grow moving forward, with more funding rounds still yet to come for HNIP and with private green investment at a record high.

Many organisations have reported an increase in productivity despite having implemented working-from-home procedures for the first time. Counter-intuitively, this has proven to be the case in some areas of construction. We are delighted to see that, by implementing new processes and social distancing measures, many heat network schemes, including those funded under HNIP, are still progressing during this period of uncertainty.

The Civic Quarter Heat Network

project in Manchester, which received a £3mn HNIP grant as part of the HNIP Pilot Scheme, is still on track to be completed by the end of the year. The Meridian Water heat network and the Bristol Redcliffe network are also pioneering through the crisis, with the latter now being slightly ahead of schedule despite an initial COVID-induced delay.

We have reiterated the benefits of heat networks many times in the past, and we have also seen them proliferate across parts of Europe. However, these benefits are two-fold in the aftermath of the pandemic.

When we move on from the health crisis, we must make sure that our communities are not left behind. This means providing more apprenticeships and green jobs than ever before. Research from the Energy Technologies Institute suggests that the growth in heat networks specifically will contribute to the creation of jobs in the region of up to 63,000 a year. With the timescale for a typical heat network project being around five years from design to commission, such jobs are also secure and relatively long-term.

Optimism for the future

This year was destined to centre around climate action and, while we could not have predicted how it would eventually unfold, we have not left our green ambitions behind us. On the contrary, the pandemic has shown us the pace at which a motivated government, workforce and people can effect dramatic change at unprecedented pace. The prospect of a green recovery that takes us closer towards net zero is right in front of us, and we must grasp at it with everything we have got.

Heat networks have a significant role to play in the decarbonisation of heat in the UK, and green investment is a 'mega trend'. Of course, we are optimistic about the future – we have every reason to be. ●

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